

ART. XV.—*On Gout—its History, its Causes, and its Cure.* By WILLIAM GAIRDNER, M. D. 12mo. pp. 232. London, 1849.

THE treatise of Dr. Gairdner, though brief, and on a subject which has occupied the pens of some of the most distinguished medical writers of the present, as well as of the past century, will be read with interest and not a little profit, by every physician whose circle of practice obliges him frequently to prescribe for a malady, the pathology and treatment of which are still but imperfectly understood, and of which it may with truth be said, that “not any of the diseases to which man is liable is a cause of greater perplexity and disappointment” to the practitioner.

Although we are not prepared to assert that the author of the treatise before us has succeeded in clearing the pathology of gout from all the obscurity with which it has heretofore been invested, and in demonstrating the true theory of its causation and nature; still, his views in relation to the pathology of the disease appear to us worthy of consideration, from their greater clearness and exactness, than those heretofore advanced, as well as from the *vraie semblance* with which they are clothed by the arguments and illustrations he has advanced in their support.

We extract from the first chapter the following remarks of the author, which exhibit the commendable spirit in which his peculiar views of the disease under consideration are announced.

“In the earliest years of my professional life, my mind was frequently called to the consideration of gout; to the observation of its various forms, the unravelling of its strange and confusing associations with other known forms of disease, and meditation on its cause and nature. I well remember how often I was perplexed by its obscure indications; how often I was surprised to discover it lurking unsuspected in the system, disturbing the healthy functions, and how much I was puzzled by seeing the symptoms of other diseases swayed from their natural and ordinary course in consequence of the intermixture of gout. The records of medical science afforded a very imperfect solution of many of these difficulties. In them, indeed, were to be found laborious and often weary descriptions of the disease; its phenomena set down with a methodical accuracy, but very seldom presenting to me a picture of the facts I had witnessed, and rarely, indeed, shedding any useful light on their nature. In these minute and exact histories, the symptoms are often classed in such a manner as to exhibit the great diligence of the observer, and yet lead the mind of the reader, as little as may be, to a ready appreciation of their nature. The best arrangement we find, is that of the order of their occurrence, yet this is not always followed. It is true, as might be expected, that a practicing physician of the present day will scarcely find his attention arrested by a circumstance or symptom of this disease, unrecorded by his predecessor; yet it is equally certain, that, in the doubts which assail his mind, he will often turn in vain to their writings for the solution of his difficulties.

“I have hailed with great interest the works which have occasionally proceeded from some of our ablest physicians during my time, and particularly some writings which have, within these few years, issued from the press. But though I have found much matter of instruction in them, I have been mortified not to discover certain observations and thoughts of my own reflected in the mind of my colleagues. Recollecting that my own opinions had undergone great change, I have been led to further inquiry, and though on certain points I may feel doubts strengthened, there are others on which re-examination and reflection only bring additional conviction. What these are will sufficiently appear in the following pages. Whether my interpretations are true or false, my contemporaries must judge. But believing it may be of use to promulgate opinions

earnestly and honestly formed, not so much from reading as from observation and meditation, I venture, with diffidence, indeed, to add another volume to the many already written on this subject.

"I shall be more readily excused for calling upon physicians to read another book, if the opinion I entertain of the great frequency of gout be correct. We are apt not to consider a man as gouty, unless he has suffered under a regular fit of the disease. I believe the gouty diathesis is often most perfectly developed in individuals who never see its local manifestations, and I am convinced that the strumous is not more frequent than the gouty habit."

The first three chapters of the treatise are devoted to a description of gout in its *regular* and *atonic* forms; the only varieties of the disease which the author admits; they alone, according to Dr. G., having a solid distinction in the nature and form of the disease.

The premonitory signs of an approaching attack of gout are concisely stated in the first chapter. Dr. G. considers it of much importance that a clear conception of them should be formed, and that they should be distinctly noted as it is at this period that remedies are most effectual; by guarding the patient from the further inroads of the disease, they are then calculated to save him from much suffering and danger.

The author's history of the regular form of the disease, through its three stages, marking its increasing effects upon the constitution, with its termination and sequelæ—apoplexy, menorrhagia, hemorrhage from the bowels, hemorrhoids, melæna, dropsy, and sudden death—is full and clear; it presents an admirable picture of gout, divested of those features which are not peculiar to it, but which mark all great disturbances of the system, being the general indications of all severe sufferings.

The description of the disease given by Dr. G., is from those cases in which its course is uninterruptedly and decidedly downwards. This was necessary, in order to present a full and correct history of gout. The author, however, warns his readers that the disease does not always fill up such a history as he has presented, and that such an array of symptoms as he has delineated, are not always, or usually present. On the contrary, he admits that the cases in which the constitution struggles well with the malady are very numerous, and that these do not occur, for the most part, in the strongest individuals.

"Very often," he remarks, "they are found in persons of loose fibre, in whom the action of the heart is sound and unimpeded. Such persons generally have sharp and feverish attacks, attended with considerable temporary weakness. It is indeed not uncommon to see them pass through a long and self-indulgent life, with regular annual, or biennial attacks of gout, which seem to have no other effect than that of restoring the individual to the enjoyment of better health, and even to observe the disease at the close of life, when all the vital and natural powers have felt the influence of time and progress of decay, also abate in virulence, and actually cease to trouble."

We have been tempted to give a synopsis of the author's very able history of gout, when it follows its regular course, from its first faint beginnings to its conclusion, as well as of his description of the disease in its irregular and devious course, as it occurs in persons of a constitution naturally feeble, or in those weakened by debauchery and excess, or worn out by the cares, fatigues, and accidents of life; but we found that, by so doing, we should present our readers with but an imperfect outline of what cannot be well appreciated when divested of any of its details.

In the fourth chapter, Dr. G. examines the theory of the dependence of gout upon a morbid matter, which, it is supposed, the regular fit of gout eliminates from the system. The inaccuracy of this theory he points out, in a

few very concise remarks. The easy and profitless explanation of a *materies morbi*, finds little countenance from physicians at the present day. Another opinion however prevails, which though it leads, as Dr. G. admits, to a sounder mode of treatment, seems to him to involve hardly less of error. This is the stomachic origin of gout, originating in the fact that symptoms of disturbed digestion are the frequent, if not the invariable accompaniment of the disease; and from its true position, as a consequence and satellite of the gout, the disorders of the stomach, upon which these symptoms depend, have been erected into a cause.

"One of the most remarkable results of arthritic indigestion," Dr. G. remarks, "is the presence of acid in nearly all the excretions of the body. This has, of late years, been called the uric acid diathesis. The adoption of such a term would imply a conclusion, to which I am by no means prepared to assent. By a diathesis, I understand a condition of the constitution, and not a simple affection of certain fluids of the body. Undoubtedly, this acid condition is very general. Dr. Garrod has lately much extended our knowledge by a very interesting proof of the existence of uric acid in the blood. Its existence in the joints had been previously made manifest by Wollaston; Landerer found it in a concretion between the coats of the aorta; it has been discovered in several fluids of the body in a state of disease. But, admitting that these accumulated facts are sufficient to justify us in the use of the expression to which I have adverted, it could not, by any means, be called the uric acid diathesis, for it appears that various acids make their appearance in the secretions. Berthollet supposed that the acid of the sweat was the phosphoric; Berzelius and Anselmino showed it to be the lactic; Thenard found acetic. No one, too, as far as I know, has ever found uric acid in the stomach; but there seems little doubt of the presence of the hydrochloric, the lactic, and the acetic, in cases of dyspepsia. This idea of a uric acid diathesis, as the cause of gout, meets with another and a fatal difficulty, from the fact that urates in the urine are common to gout, and to many other diseases. Ordinary indigestion, from whatever cause, or a slight and ephemeral fever, will cause this appearance. Dr. Prout has, indeed, here established a solid and useful distinction between that deposit of urates which is occasional and transient, and that which is more durable. 'The lithate of ammonia in the urine, is one of the most common attendants of slight dyspepsia from errors of diet.' But the same substance makes its appearance in the urine in a less transient manner, in the course of severe diseases not of a local nature, 'when no food has been taken into the stomach, and when, therefore, its formation can only be attributed to secondary mal-assimilation of the albuminous contents of the blood, and albuminous tissues.' But I have seen, and I am sure Dr. Prout has seen, very durable deposits of urate of ammonia in cases where no great constitutional disturbance, such as lepra or psoriasis, existed; where no unusual disintegration of the tissues was going forward, and where no interruption to ordinary wholesome nourishment was suspected. But, in order to establish the presence of uric acid in the circulating fluids as the cause of gout, it would be necessary to prove that it is never absent. There is nothing, however, of which I am more perfectly satisfied than that I have often seen cases of true regular gout, in which there was no evidence of excess of urates in the urine; and the cases are not rare, in which deposits of earthy phosphates, and mixture of earthy phosphates with urates, are met with."

"These are sufficient reasons for objecting to the use of so hypothetical an expression as the uric acid diathesis, and for believing that the expulsion of urates from the system through the urine, and of other acid and earthy matters through this and other excretions, is to be looked upon only as one of the many consequences or symptoms of gout."

Dr. G. believes that it cannot now be doubted, that uric acid, as well as urea, is a necessary and constant ingredient of pure and healthy blood; that though derived from the food, they are not imbibed with it, but are formed within the body, and enter the blood in the earlier stages of assimilation; and

that we are yet ignorant of any useful purposes they serve, and can only consider them in the light of refuse or effete matters, which, if not duly eliminated by the kidneys, are productive of much disturbance to health. He believes that the disappearance of these substances in the urine, and their accumulation in the blood, are merely a frequent symptom and consequence of gout, which is itself, again, the cause of other important phenomena.

"This is, indeed, the frequent cause of that general cachectic condition so often seen in gout: hence arise distressing headaches, somnolence, and indifference. It is also," Dr. G. supposes, "the origin of much of the dyspepsia with which the gouty are afflicted, and to this circumstance are to be traced those disastrous cases in which we see sudden death resulting from some violence affecting any great function of the body."

Dr. G. had, for a long time, a strong conviction that, in the altered relation of urea and uric acid to each other, would be found the explanation of many morbid phenomena, and that, in certain morbid states of the system, the nascent urea becomes uric acid during the assimilation of the food.

This latter opinion is at variance with that advanced by Liebig and Wöhler, who consider the uric acid as the parent of the urea—a supposition that is based upon very slight and inconclusive evidence, and will not stand in the way of the adoption of the view suggested in the work before us, in the support of which the author has adduced a number of apparently conclusive observations. These observations, if devoid of error, show that as the amount of uric acid in the urine is increased that of the urea is diminished, and *vice versa*.

Dr. G. believes that, in a state of health, the elements necessary for the composition of urea are separated from the blood; but that, under the influence of the gouty diathesis, the secretion of uric acid takes place with greater abundance.

After presenting the atomic composition of urea and uric acid, the author remarks:—

"A simple inspection of these figures is suggestive of much important reflection, having a direct application to the facts of this disease, and shedding light on the function of respiration itself. If, indeed, a less perfect consumption of carbon, or elimination of carbonic acid, by the lungs, would give us uric acid in the blood; we may divine not only the origin of the urates in the gouty, but see in what way repose and indolence aid in the production of this symptom of the disease, and how exercise and air contribute to its removal. We may also readily enough understand the vicarious origin of urea and uric acid during the process of respiration, without having recourse to the improbable idea of their transition into one another at a future stage.

"When we consider the atomic composition of urea and uric acid, we can easily understand the experiment of Liebig; but, more than this, we can see its great importance, and its direct bearing on the subject we are now considering. If, by decomposition, we can obtain such changed relations in the elements of uric acid as to yield us urea and carbonic acid, we can have little difficulty in perceiving that the imperfect arterialization of the blood may exactly reverse this process in the living body. To constitute uric acid, the chief change required is the addition of carbon to urea. We have already proved that these substances are sometimes correlative and vicarious; we have made it probable that, as they are found in the blood, so also there they take their origin. The subject seems now so much narrowed, that we may pronounce, with greater confidence, that, in the chemical changes which take place during the process of respiration, the two substances, urea and uric acid, are generated; and, if we scrutinize these changes closely, we may easily perceive circumstances which favour the production of one or other compound, according to the condition of the patient."

"In the history of gout, I have pointed out many signs indicating that the

decarbonization of the blood is deficient. The blue lips, the swollen veins, the bloated complexion, the skin diseases, and general cachectic condition, sufficiently mark this. It is, indeed, evident in the whole natural history of the disease.

"When the blood is perfectly oxygenated, the heart and vessels are roused to energetic contraction; but it is quite certain that, when the expiration of carbonic acid has been less copious, the absorption of oxygen diminished, and a portion of venous blood carried forward into the arterial system, the circulation is slackened, a depressing influence is exercised on the brain and nervous system, congestion takes place in the vessels, and that state of things which I have pointed out as favourable to the creation of a gouty diathesis is speedily brought about."

After noticing the various circumstances which diminish the exhalation, from the lungs, of carbonic acid—as, repose of body, sleep, confined air, intense and long-continued mental employment, anxiety and depression of mind, &c.—Dr. G. remarks, that it has already appeared to him probable that the urea and uric acid, which are constant and healthy ingredients of the blood, originate in the lungs, during the process of respiration; and that no less certain does it appear that, in some conditions of the body, and with some habits of the patient, the carbonaceous matters, which should be cast out of the system, are returned in the blood. He then asks:—

"Can it then be wonderful that, of two ingredients, the one which is most abundant in carbon should now be formed at the expense of that which contains less; that the urates, in fact, should be found in excess in the blood and in the urine, and that the urea should suffer a very material diminution? I have measured the quantity of urine made by the patient whose case is mentioned at p. 85. It amounted to 36 ounces, in 24 hours; and as 4 parts of urea in 1000 of urine had disappeared, it follows that 68 grs. of urea were suppressed in the urine, to reappear in the system in some noxious form or other. This appears to me certainly the real origin of the urates. The injurious effect of so great a change in the secretions of the body, of the suppression of a healthy evacuation, its reappearance under a more noxious form, and of the retention in the blood of a poisonous ingredient, must be obvious to all practitioners."

Dr. G. has illustrated the correctness of this view by a comparison of the urine secreted during sleep, with that passed in the day; the condition of the urine in an asthmatic patient, breathing with difficulty; that passed during repose and during active exercise; that passed by males and females; that passed by individuals living on different kinds of food; and in this manner showing that all those circumstances which impede the activity of the process of respiration, and favour the accumulation of carbon in the blood, diminish the quantity of urea, and increase that of uric acid, in the urine; whilst all those conditions which increase the activity of the respiratory function, and facilitate the arterialization of the blood, diminish in the urine the ratio of the uric acid to the urea.

In the sixth chapter, the question of the inflammatory character of gout is discussed. Dr. G. maintains that inflammation is not essential to gout. His reasons for this conclusion are: the rapid occurrence and dispersion, in many cases of gout, of the local disease; the languid circulation of the gouty; the rare occurrence of gout at that period of life when men are most prone to inflammation, as well as in individuals of a robust constitution.

"The heavy and corpulent; those who have loaded viscera and languid circulation; persons of inactive temperament and lazy habits; those in whom other diseases assume indolent and cachectic forms, are its choicest victims. It shuns the stout and healthy labourer; it seizes the fat and dull farmer. It seldom visits the active and athletic sportsman; it revels in the blood and joints of the exhausted debauchee. Its whole history marks it as a complaint of an asthenic character."

"Were gout essentially inflammatory, it might be presumed that inflammation would be its primordial local symptom, and in this case we should surely expect that it would sometimes run the ordinary course of phlegmonous disease. Not only is this not the case, but there seems something in the nature of the disease which prevents the inflammation that supervenes in gout ever running into the suppurative process. I never saw but one instance of phlegmon in gout, and I never saw a more ill-conditioned and offensive discharge."

"The terminations of gout, and its vicarious and cognate diseases, also mark its nature. They are, suppression of the natural evacuations, spasm, cramp, dyspepsia, melancholy, apoplexy, and dropsy."

In Chapter VII., Dr. G. presents his own views of the true nature of gout. Venous congestion, he considers to be the first condition essential to the formation of the gouty diathesis. The capillary and nutrient vessels, distributed on the extreme and sentient fibrillæ of the nerves, being in the same distended condition as the larger venous trunks, and being bound down by the firm fasciæ in which the gout has its usual seat, cause, by their pressure upon the nerves, the painful phenomena which attend the disease. The contents of the over-distended vessels being compressed between the power derived from the heart and arterial system, urging it forward on its course, and the antagonistic resistance of the great veins leading to the right auricle, cause, occasionally, the capillaries to give way, causing a true hemorrhage in the part affected. If the rupture take place in a minute capillary, carrying the serous portion of the blood only, œdema is the consequence, but if the burst vessel be one carrying red blood, a true ecchymosis is formed.

"This view of a fit of gout," Dr. G. remarks, "may startle, from its novelty; but I am thoroughly convinced, from long observation of the disease, that I have given the true rationale. All its symptoms may be readily arranged under this explanation. Any other, that I have ever heard of, leads us into such difficulties as to leave us only in greater doubt than before."

In the eighth chapter, the exciting causes of gout are considered. After showing that it is the disease of the sedentary, the supine, the luxurious liver, and too frequently of the student, and over-taxed man of business—that all its producing causes are such as increase the mass of the circulating fluids, while they impede the full arterialization of the blood, and cause its accumulation in the venous system, Dr. G. condenses the whole argument, under this head, in the following remarks:—

"Chronic diseases may, in one sense of the word, be considered as mere modes of decay of the system. This is true, whether they be the result of original construction, the offspring of our own follies, or the effect of time; but there is no chronic disease which, in my mind, so remarkably exemplifies the progress of decay as gout. When we consider its hereditary descent, we can hardly withhold our belief that, though its great symptoms are exhibited at the decline of life, yet it must lie concealed in the constitution of the young. Physicians who observe carefully the ailments of infants and growing youths, cannot fail to be struck with the frequent indications they give of arthritic disease. From these faint beginnings, to the final destruction of health and life, the course of the disease is gradual, sometimes almost imperceptible, but steady and certain, if its great causes be uniformly maintained. Indeed, I do not know a better measure of decay of the system than is afforded by gout."

"The real pathology of gout appears, then, to me to be comprised under these heads: an increased pressure of the blood from its accumulation in the great veins, and an altered state of that fluid leading to the formation of uric acid instead of urea; these results being dependent on too copious an assimilation of nutriment, on defective respiration, and on more or less suppression of the healthy evacuations from the liver, the kidneys, and the skin. The plethoric state, thus engendered, causes, in strong constitutions, painful manifestations of

the regular disease; in feebler habits, its irregular and atonic forms. But this plethoric condition has its cause, which I have as plainly pointed out as my desire not to assume, in a medical treatise, the censorial privilege of a moralist, would permit. We must still pause for a reply to the dark and intricate question, why some constitutions, when thus affected, generate gout, while others show no tendency whatever to the disease. The progress of science will prove whether that unknown something in the system, which we express by the term hereditary and constitutional tendency, can be laid bare to the senses, or whether it must be for ever veiled from our eyes; but at present it is undoubtedly one of those mysteries of science requiring implicit belief, on which our keenest study has not yet shed one ray of light.

"It is, notwithstanding, very certain that the blood of those persons who fare too sumptuously, and lead indolent lives, is in a less healthy condition than that of those whose indulgence is moderate, and whose occupations are active and salutary. So far, indeed, am I a humoralist, as to believe that chemical researches will lay before us more morbid changes in the fluids than the recent discoveries that the urea and urates in the blood increase, diminish, and alternate with each other, according to the varying condition of the system. These changes will, no doubt, prove explanatory of phenomena which yet perplex us, and they may also become concurrent causes with plethora of the fluids, and the rupture of vessels, in explaining the paroxysm of gout; but, even then, I should not depart from the opinion I have expressed, that they are all of them only signs of that state of the system indispensable for the production of the local phenomena which distinctly characterize the disease. It is unquestionable that, though revealing itself by the outward manifestations I have described, gout is due to a particular tendency of the constitution, of which no explanation can yet be given, and that under suitable circumstances it may never disclose itself."

In Chapter IX., after considering the question of the curability of gout, and arriving at the general conclusion, that, in its earlier stages, the disease is perfectly curable, though not through what is vulgarly called physis, but chiefly from a well-directed course of diet and regimen, Dr. G. enters into an exposition of its true hygienic management. He points out the fact, which he had previously noticed, that the incipient signs of gout may be discovered in infancy; and the importance, therefore, in races where the gout is as certain an inheritance as the patrimonial estate, to commence, from birth, a rational course of hygienic treatment, calculated to extinguish the first germ, and prevent altogether the growth of a malady "which may very justly be regarded in the light of a family curse."

The remarks of our author on the errors committed by parents, in reference to the nourishment of their infants, and the diet of childhood generally, are particularly excellent; and not less so, are the hints he has thrown out in regard to the necessity of a temperate use of a wholesome, nourishing diet, abstinence from heating drinks, daily active exercise in the open air—particularly the free, pure air of the country—cheerfulness of mind, and the avoidance of every species of sensual excess, from puberty upwards, as a means of preventing the occurrence of gout. We believe with Dr. G. that more constitutions are undermined, and a greater amount of disease and suffering produced, by gross errors in regard to hygienic rules, in infancy, childhood, youth, and after age, than from all the other morbid causes to which the human being is liable to be exposed. It is true, many of these errors owe their origin to the ignorance or indifference of parents and nurses, and to the cravings of appetite, mere indolence, or the neglect of sound moral considerations, during the period of youth and maturity; but we fear that some of them are to be attributed to false views, promulgated by physicians who have neglected to study the true principles of hygiene as founded upon the physiological laws of the animal organism.

In Chapter X., the proper medical treatment of gout is pointed out. Dr. G., while he condemns copious blood-letting, believes that the lancet may be employed in such a measure, and with such precaution, as to do good by relieving the over-loaded heart and vessels, which the symptoms of the disease point out as required. Small bleedings (from three to six ounces), he believes, instead of being debilitating, may be ranked with tonics, on account of the cheerfulness, energy, and sense of power, they suddenly restore to patients oppressed by a state of plethora. They most beneficially, too, supplant, he conceives, the use of purgatives, which he asserts to be very often noxious in gout, and attended with considerable risk, when used after the manner recommended by Sutton, for the relief of the fever which attends the disease.

When the abstraction of blood is limited to the small amount required merely to relieve the oppression of the system, according to Dr. G.,

“The secretions of the kidneys and liver, which were arrested by the too great pressure on these organs, are established; the fulness of the head, which prevented the due discharge of the functions of the brain, is also relieved, and the uncloudy nervous influence is transmitted to the most distant parts of the system, with an undiminished power. The consequence of this, is not a return to a state of hyperæmia, but a condition of things in which, with a well-regulated diet, the patient may, if he will, contend successfully with a gouty diathesis.”

Dr. G. never makes use of bleeding, in cases occurring in an impaired or defective constitution; he believes that some considerable degree of vigour is necessary to its legitimate use, which is generally the case in the early stages of regular gout. He prefers the blood to be taken from the arm, but in cases where there is much suffering in the head, there is an advantage, he admits, in drawing it by cupping, from the nape of the neck.

Active purging our author condemns, but considers laxatives to be essential. “Even,” he remarks, “when patients lead a most abstemious life, it is necessary that the bowels should be relieved occasionally, by medicine.” The warm, and even the more powerful vegetable aperients, such as senna, rhubarb, aloes, jalap, and scammony, seem to him far better adapted to the constitution of the gouty than the neutral salts. They may be given with great advantage in the form of tincture, and associated with the warm aromatics, and tonic bitters.

Although Dr. G. objects to the use of neutral salts as purgatives, he has found much advantage from their employment, in small doses, as diuretics, particularly such salts as are formed by the vegetable and phosphoric acids. The latter have seemed to him singularly useful. They aid much, when given in half-drachm doses, frequently repeated, in mitigating the pain, and assuaging the general irritation, which accompanies the paroxysm.

Dr. G. remarks, in reference to the alkalies and earthy carbonates, that, as remedies in gout, they cannot be esteemed of the smallest account, and that they will much disappoint those even who look to them for any signal relief of symptoms.

Tonics, when used at the subsidence of the fit, and accompanied by exercise and suitable diet, he is convinced have not been too much extolled, hardly even duly appreciated. In all those forms of lingering and atonic gout, which affect the distant parts of the body with irregular and flying pains, the stronger tonics, he remarks, will be found useful and potent assistants to the warmer vegetable purgatives. Quinine, in doses of two grains, twice or even three times a day, accompanied by a mild laxative at night, will very often succeed in restoring comfort.

“In the last painful stage of gout, iron will often be found a most important resource, unless there be signs of a strong tendency of blood to the head; this,



however, is seldom the case at the close of an attack of gout. There is a form of the disease chiefly seen in old people, which is manifested by swollen articulations of the hands, with slight derangement of stomach, faltering in the action of the heart, and intermissions of the pulse, for which iron seems to me the best, if not the only remedy. The forms in which I have chiefly used it, are the saccharine carbonate of the Edinburgh Pharmacopœia, a most useful preparation, the citrate and the tartrate."

In regard to the cold water cure, Dr. G. believes that where it is efficacious it is dangerous. In the latter stages of the disease, he does not doubt that it is fraught with the utmost risk; and believes that the facts in this instance, could an honest statement of them be arrived at, would fully confirm this opinion.

Dr. G. has no doubt that colchicum is one of those drugs, whose claim to be considered specific is well established. The *modus operandi* of the remedy is not wholly involved in mystery. It has been demonstrated, that it causes a more copious discharge of urea from the system. He has found, in repeated investigations, that the increase of urea was attended by a great diminution of the urates in the urine, confirming the opinion that urea and uric acid are correlative and vicarious substances. He believes that the operation of the colchicum is through the nervous system.

The cases to which colchicum is most applicable are, according to Dr. G., without doubt, those of the regular disease, without injury of organs. Cases of atonic gout, he remarks, certainly receive less relief from its use, and some of them are so little influenced by it, as by no means to compensate for the low and depressed feelings it often creates. These effects may, however, be much obviated by combining it with warm aromatic tinctures and water, and with the vegetable laxatives, which do not destroy its specific action, but, on the contrary, much promote it.

Our author believes that the most common reason of the failure of colchicum is the unnecessarily large doses in which it is frequently administered.

"If," observes Dr. G., "the disease be permitted to expend its first violence, colchicum may be most safely and effectually used. When the fever has abated, the œdematous swelling of the part established, and the bowels well relieved, colchicum may be used with good effect and perfect safety. A long experience of the medicine now enables me, with great confidence, to recommend to younger practitioners to abate much the amount of the dose they use. I have seen doses of one drachm of the wine or tincture given twice and three times in the day, with no effect on the disease, but with sad disturbance of the patient's constitution; and I have seen the same case led back gently and quickly to health, with doses varying from ten to fifteen minims, after a little time had elapsed, and the fire of the disease was in some degree extinguished."

In concluding his account of the treatment of regular gout, the author remarks:—

"I recommend a perfect holiday to all men who have gone through a fit of gout. It should be passed in good, bracing air, with as much exercise as their feeble state will enable them to take; in order that the lungs may be well expanded, the assimilation of the food be perfected, and a pure and well-oxygenated blood be worked into the organic textures and moving structures of the body. During this time of seclusion, it is of much importance that a light but nourishing diet should be used, and that the bowels should be gently acted upon, so as to relieve the system of any remaining oppression. These purposes may be well accomplished during a residence at some of the fashionable watering-places."

The treatment of irregular gout forms the subject of the eleventh chapter. The author notices the difficulty of laying down any clearer, certain rules to

guide us in these perplexing and too often alarming cases. The free use of opium and powerful stimulants he condemns as often very unnecessary, and then injurious. If time, he remarks, be given, and forbearance practiced, it is wonderful to observe what painful and alarming symptoms will quietly depart, without artificial aid. The immediate seizure is generally, if not always, caused by indigestion, some disturbance of the circulation, or some emotion of the mind; and as these are removed their effects pass away.

"At present, it is a matter of very nice tact and judgment to distinguish the case in which the most heroic remedies must be instantly applied, to sustain the fleeting powers of life, from that in which the advantage of the patient is best consulted by '*expectation*' and forbearance; but, of one thing I feel certain, that medical practitioners will exhibit those qualities which entitle them to confidence, when they do not suffer themselves to be hurried into decision by the clamour of patients and their friends. In general, it may be said that those cases attended with little change in the pulse, even though there be intense suffering, severe vomiting, and signs of much disturbance in the stomach and diaphragm, best bear delay; and that those in which the action of the heart is very depressed, and where there is little acute pain, are the cases which most imperatively call for prompt and effectual aid."

The patient who is frequently affected with metastasis of gout to the head, Dr. G. believes to be seldom free from structural disease of that organ; either earthy formations disturbing the action of the valves, and injuring the function of the coronary arteries, by which means the nutrition of the heart is impeded; or a fatty degeneration of the muscular substance, leading to dilatation of the cavities. The first of these is incurable; but Dr. G. believes that the latter may be removed by putting an end to the secretion of oil globules within the fibres of the muscular structure of the heart, and by restoring that of fibrin. For this purpose, he proposes a diet, composed of little hydrocarbonaceous matter, and furnishing the albuminous elements to the blood; that is, a more animal diet, with pure air, and well-regulated exercise. Colchicum, he considers not to be adapted to such cases. Purgatives, and even laxatives, he condemns; but the free use of chalybeates and tonics, in powerful doses, continued for many months, he enumerates as among our most useful remedies. The gallic acid has also seemed to him, in several cases, of great benefit.

Metastasis to the head is, according to Dr. G., by far the most usual form of misplaced gout.

"It occurs with every degree of suffering. The headaches from which those persons suffer in whom the excretions of urates and urea have, from any cause, been suddenly diminished or temporarily arrested, are only a commencement of this affection, which may well be likened to the effect of a poison. I believe that the substance of the brain itself is the part usually affected in these cases; and my reasons are, that they are never attended with delirium or wandering, but always accompanied by stupor and somnolency; and that, when they terminate in apoplexy, the ruptured vessel is found in the cerebral substance."

In cases of metastasis of gout to the head, Dr. G. condemns large bleedings; a little relief given to the system by a small bleeding, will, he remarks, enable the kidneys to resume their office, and the local symptoms will then safely depart. Colchicum, in minute doses, he considers a most useful remedy, by increasing the secretion of urea. Laxatives are always necessary; and even a cautious use of the more drastic purgatives may be required. Iron and tonics of all kinds must either be forbidden, or used with the utmost vigilance and caution. When the stagnation in the brain is plainly owing to the impaired

power of the heart, Dr. G. can nevertheless conceive that they may be of service, though he has never made use of them.

Much skill is requisite in the management of the diet; but, even in cases of translation to the brain, he is persuaded that it should be chiefly of animal substances.

Whatever may be the estimate which shall be formed of the views of Dr. Gairdner, in relation to the pathology of gout, the work before us will be read with interest. The opinions advanced are evidently the result of close observation; while the practical directions given for the treatment of the paroxysms of the disease, in its more common or regular form, as well as the plan laid down for the prevention and eradication of the gouty diathesis, will command the attention, as we believe they should the confidence, of such as may be called upon frequently to treat a malady which is emphatically the offspring of luxury and vice, combined with the cares and perplexities, the anxieties and disappointments, incident to a highly artificial state of society.

D. F. C.